

Notice of Allowability

Application No.

10/086,543

Examiner

Jeff Piziali

Applicant(s)

KOJIMA ET AL.

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment and Remarks filed 1 March 2007.
2. ☒ The allowed claim(s) is/are 1, 2, 5, 12, 13, 30, and 33 (renumbered as claims 1-7).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Jeff Piziali
14 May 2007

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings were received on 23 June 2005. These drawings are acceptable.

Allowable Subject Matter

3. Claims 1, 2, 5, 12, 13, 30, and 32 (renumbered as claims 1-7) are allowed.
4. The following is an examiner's statement of reasons for allowance:

The present invention comprises a driving method and device of a liquid crystal element. The prior art, *Matsui et al (US 6,972,773 B2)* discloses allowing a liquid crystal element [Fig. 3; 11] to display a level of grayscale (see Column 5, Lines 32-47), said liquid crystal element displaying throughout a frame period (see Figs. 16A-16C) by switching ON-state said liquid crystal element during a period corresponding to grayscale data that defines said level of grayscale, said method comprising: sequentially selecting, according to said grayscale data, a plurality of first sub-field periods [Fig. 16B; B0-B3] continuous with respect to one another and a plurality of second sub-field periods [Fig. 16B; B4, B5-1, B5-2, B6-1, etc.] continuous with respect to one another used for securing a period corresponding to said grayscale data, said

Art Unit: 2629

plurality of second sub-field periods following consecutively said plurality of first sub-field periods (see Fig. 16B), each of said plurality of second sub-field periods being substantially equal to a length of a sum of said plurality of first sub-field periods [i.e., $(B0 + B1 + B2 + B3)$] and any one of the first sub-field periods [i.e., $B0$], in a direction from a first sub-field period and a second sub-field period positioned on a boundary of said plurality of first sub-field periods and said plurality of second sub-field periods toward a first sub-field period and a second sub-field period at a position most remote from said boundary; and driving by switching ON-state said electro-optic element during said sub-field periods selected (see Column 12, Line 1 - Column 13, Line 2).

However, as argued by the applicants (on Pages 6-7 of the 'Amendment Under 37 C.F.R. 1.111' filed 1 March 2007), the prior art does not expressly teach the subject matter of, *dividing the frame into a plurality of sub-fields, the plurality of sub-fields having a first group of sub-fields continuous with respect to one another and a second group of sub-fields continuous with respect to one another, the first group of sub-fields being adjacent to the second group of sub-fields, each of the first group of sub-fields having a same first sub-field period, each of the second group of sub-fields having a same second sub-field period which is substantially equal to a sum of first sub-field periods of the first group of sub-fields; and selecting, according to the grayscale data, sub-fields that are adjacent to each other in a direction from a boundary between the first group of sub-fields and the second group of sub-fields toward a sub-field of the first group of sub-fields or a sub-field of the second group of sub-fields at a position most remote from the boundary; and driving by switching ON-state the liquid crystal element during period of*

Art Unit: 2629

the sub-fields selected, in combination with the remaining features and subject matter of the instantly claimed invention.

This distinct structural and operational arrangement has been incorporated into both pending independent claims (i.e. claims 1 and 30 -- renumbered as claims 1 and 6), thereby rendering them allowable.

Any comments considered necessary by applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeff Piziali
14 May 2007